

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
International Comparison and Consumer)	GN Docket No. 09-47
Survey Requirements in the Broadband)	
Data Improvement Act)	
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51
)	
Inquiry Concerning the Deployment of)	GN Docket No. 09-137
Advanced Telecommunications Capability)	
To All Americans in a Reasonable and)	
Timely Fashion, and Possible Steps to)	
Accelerate Such Deployment Pursuant to)	
Section 706 of the Telecommunications)	
Act of 1996, as Amended by the Broadband)	
Data Improvement Act)	

To: Secretary, Federal Communications Commission
Attention: The Commission

**COMMENTS OF KENTUCKY AUTHORITY FOR
EDUCATIONAL TELEVISION
IN RESPONSE TO NBP PUBLIC NOTICE # 26**

The Kentucky Authority for Educational Television (KET) provides these comments in response to the Commission's Public Notice¹ seeking comment in the referenced dockets on spectrum for broadband.

We are the statewide licensee and operator of noncommercial educational television stations WCVN-TV, Covington, KY; WKAS, Ashland, KY; WKGB-TV, Bowling Green, KY; WKHA, Hazard, KY; WKLE, Lexington, KY; WKMA-TV,

Madisonville, KY; WKMJ-TV Louisville, KY; WKMR, Morehead, KY; WKMU, Murray, KY; WKOH, Owensboro, KY; WKON, Owenton, KY; WKPC-TV, Louisville, KY; WKPD, Paducah, KY; WKPI-TV, Pikeville, KY; WKSO-TV, Somerset, KY; WKZT-TV Elizabethtown, KY along with translators W20CT-D, Augusta, KY; W23DM-D, Falmouth, KY and W28DD-D, Louisa, KY.

Through these 16 public TV stations and three TV translator stations, KET's network serves a critical educational and informational function in the State of Kentucky. KET is the only statewide broadcast medium in Kentucky, connecting the Commonwealth and reaching 3.5 million households. More than a million adults and children watch and use KET services each week. A large part of this audience who receive our services over-the-air would or could not subscribe to alternative distribution mechanisms, and the loss to the State would be enormous if KET's ability to bring its programming to its audience over-the-air is curtailed.

KET is Kentucky's most accessible and comprehensive educational institution and a leading example of how statewide public television can work with education systems to improve teachers' skills and students' learning. The Attachment to these comments provides information, in considerable detail, concerning KET's educational services.

In the Public Notice, the Commission seeks specific data on the use of spectrum currently licensed to broadcast television stations. Among other things, the FCC is attempting to account for the value that the country puts on free, over-the-air television. KET urges that our use of our licensed television broadcast channels is exceptionally

¹ *Data Sought on Uses of Spectrum - NBP Public Notice #26*, GN Docket Nos. 09-47, 09-51, 09-137, Public Notice, DA 09-2518 (rel. December 2, 2009) (the "Public Notice").

efficient and productive and brings great value to our communities and our State. The cost to us and to our communities in the loss or curtailment of our over-the-air transmission service would be unacceptable.

Comments

Digital Broadcast Channels

KET is offering three programming services over its digital television stations. KET's primary broadcast channel is broadcast in stunning high definition, 24/7. It features national primetime PBS programs; KET-produced programs about Kentucky; trusted PBS Kids series; how-to programming; GED programs for adult learners; and programs produced by independent Kentucky filmmakers.

KET2, KET's second broadcast service carries more popular programming from PBS and KET, featuring primetime national encores, KET-produced programs about Kentucky, trusted series from PBS Kids, and an extensive line-up of how-to programming. This services airs 24 hours per day in standard definition with digital broadcast coverage statewide; However, KET2 is not carried on all the cable systems in the state – without over-the-air transmissions, 22% of KET's potential audience would immediately lose access to this programming.

The third programming service is the Kentucky Channel – featuring programming by, for, and about Kentuckians: legislative coverage; arts, history, health, music, and documentary programs; encore presentations of Kentucky programming and programs from independent producers. This service also airs 24/7, in standard definition with digital broadcast statewide. However, even fewer cable systems carry the service now.

KET DataCast

In addition to over-the-air broadcast programming, KET uses a portion of its bandwidth to provide KET DataCast, Kentucky's first and only statewide, all-digital datacasting system, allowing local, state, and federal agencies to distribute critical information via data broadcast to entities such as schools, health departments, and emergency operations centers, without depending on internet connections and the internet's associated reliability and traffic issues.

KET DataCast First Responder's Network is part of the Digital Emergency Alert System. The Louisville Fire Department utilizes KET's digital network to provide simultaneous data and video, as well as weather radar images, forecasts, and warnings from the NOAA (National Oceanic and Atmospheric Administration), to all Metro Louisville fire stations.

The Kentucky Department of Family and Health Services, in cooperation with local hospitals, utilizes KET DataCast as a way for local health departments across the state to hold meetings and training sessions without traveling to specific locations, reducing travel costs and reducing down service time to the communities they serve. KET DataCast also allows local hospitals to receive up-to-date information from the Department of Health Services and Center for Disease Control.

These services would be impossible if KET could not broadcast over-the-air.

Spectrum Allocation

KET fully utilizes its 6 Mhz bandwidth at each broadcast station 24 hours daily, 7 days per week. As noted above, KET broadcasts one high definition and 2 standard definition channels along with several datacast services. KET purchased equipment to do statistical multiplexing for dynamic allocation of the bandwidth in our transmitted data stream. Our high definition channel can use up to 14 mbps and our standard definition

channels can use up to 4.5 mbps each. 600 kbps are allocated for datacast services such as NOAA EMWIN weather information, Kentucky Department of Health, Kentucky Emergency Management and Louisville Fire Department.

Because KET fully utilizes its maximum bandwidth allocation at all stations at all times for digital broadcasts and datacasts in partnership with other public service entities, “sharing” of KET’s channel capacity with other stations for delivery of their program material or other uses is not possible, even if it were legally permissive. If KET were required to give up channel capacity, KET would have to eliminate some program services as well as the datacast services provided for KET’s partnerships with other public service and public safety facilities.

Population Demographics

Median household income for the year 2007 for Kentucky residents was \$40,299 compared to the United States average of \$50,740 for a reduction from average of \$10,441. Persons below poverty for Kentucky in 2007 were 17.2% compared to the national average of 13%. Kentucky’s unemployment rates for 2009 indicate unemployment in the 11 per cent range. These economic indicators suggest the possibility of a greater number of households which rely on direct over-the-air broadcast as a means of television reception due to their economic circumstances.

Coverage Statistics

There are approximately 550,000 households in the KET coverage area that do not have cable or satellite. This includes the Commonwealth of Kentucky and places where KET’s signals have penetration into surrounding states. These households represent approximately 10.5% of all households in those counties reached with KET over-the-air broadcast signals.

Signal Distribution

In Kentucky there are 151 cable head ends that receive KET over-the-air broadcast for viewer distribution from approximately 54 cable companies.

Satellite coverage for local market insertion is provided by DirecTV in the following markets: Cincinnati, OH (DMA 34); Ashland, KY, Huntington, Charleston, WVA (DMA 65); Lexington, KY (DMA 63); Evansville, IN (DMA 102); Louisville, KY (DMA 50); Paducah, KY, Cape Girardeau, MO, Harrisburg, IL (DMA 78)

Satellite coverage for local market insertion is provided by Dish Network in the following markets: Cincinnati, OH (DMA 34); Lexington, KY (DMA 63); Evansville, IN (DMA 102); Louisville, KY (DMA 50); Paducah, KY, Cape Girardeau, MO, Harrisburg, IL (DMA 78).

Early in 2008, Dish Network ceased local market delivery of KET's WKAS-Ashland, KY station in the Ashland, KY, Huntington-Charleston WVA (DMA 65) market. The local receive facility (LRF) for Dish Network did not have adequate signal for the broadcast station to deliver a quality picture for their subscribers. KET explored the cost of a fiber-optic link to the LRF with costs proving prohibitive for KET's over-burdened budget. Recurring monthly service charges for a service robust enough to carry KET's full program content to the LRF were estimated to be \$4,500. For this one site alone a yearly cost of \$54,000. Based upon this figure, it is projected that the yearly cost for delivery of KET's broadcast signal to cable headends via other means than direct over-the-air broadcast could be greater than \$8.75 million yearly.

Digital Investment

KET was a leader in state educational networks with the transition to digital beginning in 1999 and deployment of the DTV station operation in Louisville, KY. KET began our digital transition by the upgrade of the state microwave system to enable it to carry digital traffic to each of the transmitter sites. Once completed, each transmitter site had to be equipped with new antenna systems, coaxial cable, transmitter, building HVAC systems among other things, to step forward with digital broadcast. Costs of DTV equipment were in excess of \$12.5 Million.

KET's Network Center in Lexington, KY was transitioned to digital operation in 2009 with a cost in excess of \$15.7 Million.

Total costs were in excess of \$28.2 Million. Much of this investment of tax dollars and contributions would be wasted if KET were to have to shut down its over-the-air broadcast network.

Other Costs

KET has 15 broadcast towers for the 16 UHF DTV stations in operation. These sites are owned by the Commonwealth of Kentucky through KET. Over the years, KET has entered site and tower use agreements with various local public safety entities; communications traffic for police, fire, rescue operations just to name a few. KET has several state agencies utilizing tower space for communications including Kentucky State Police, Kentucky Emergency Warning System (KEWS), Kentucky National Guard and others. Federal agencies include NOAA weather radio, US Department of Justice, National Forest Service, FBI and others. In order to offset the high cost of tower maintenance, KET has entered long term agreements with these facilities which provides income directed toward those costs. The dollar return for these tower use agreements

would not be enough to offset the cost of delivery of KET's broadcast signals by alternate means to each cable and satellite carrier and contribute to 100% of the costs to maintain the tower structures.

Conclusion

For the foregoing reasons, we urge the Commission to find that our use of our television broadcast channels efficient and productive, and abundantly serves the public interest. Our over-the-air transmission capabilities must be protected in any effort that the Commission might undertake to allocate more spectrum for wireless broadband systems.

Respectfully submitted,

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ATTACHMENT TO KET COMMENTS

KET Educational Services

KET's top-notch P-12 resources are used by 98% of Kentucky public schools and in all state universities. All KET classroom resources—including KET EncycloMedia, KET ED On-Demand, and the Arts Toolkits—are aligned to Kentucky academic standards. Teachers report that these resources are having a direct impact in raising student test scores.

KET EncycloMedia provides more than 46,000 Kentucky teachers and pre-service teachers with a comprehensive online multimedia learning service. Funded jointly by Kentucky Department of Education (KDE) and KET, the service is aligned to state standards and offers 50,000 downloadable/streamable videos, photos, clip art, quizzes and lesson plans, an interactive atlas, a “this day in history” calendar, and many other resources. Since 2005, KET EncycloMedia has logged more than 5 million views, and averages 61,000 log-ins and 192,000 pageviews each month.

The KET Arts Toolkits is an award-winning multimedia project, provide high-quality videos, lesson plans and other resources in dance, drama, visual arts, and music, all aligned to state standards and designed to help teachers integrate the arts into the classroom experience. It is the result of an innovative collaboration between Kentucky's arts and education communities and has expanded student experiences and engagement in the arts, boosted teacher preparedness, and improved test scores.

KET ED On-Demand offers streaming video of instructional and professional development programs for K-12 Kentucky public schools, including national instructional series, original KET productions for the classroom, and professional development seminars. Teachers can search the catalog by grade level and curriculum area, and then show videos to students at their convenience. Programs are also available via open broadcast on KET, KET2, within block feeds on KET KY, on DVD, and via podcast delivery.

KET Distance Learning provides Kentucky students with equitable access to high-quality classes, through video and other rich visual media, in German, Latin (including AP[®] Latin Literature), Physics (including AP[®] Physics B), and Arts & Humanities – - subjects that are often problematic for schools due to a shortage of qualified teachers and/or small class sizes. These classes provide personalized interaction with master teachers and tutors through 21st century technologies such as online social media, Pencast tutorials, and telephone/Skype tutoring.

KET plans, produces and provides high quality digital instructional resources—video, Web sites, background materials, lesson plans, interactives, teacher guides, and other media—all tied to Kentucky standards. KET has produced hundreds of resources in all curriculum areas and for all grade levels.

Instructional resources to meet state and national STEM imperatives include Scale City, STEM Learning Objects, Raindrops to Rivers (water quality resources), and Virtual Physics Labs. Scale City, for example, teaches proportional reasoning through engaging short introductory videos that introduce a problem, and progress to fun math interactives that require students to solve the problem. Teacher resources and lesson plans are also provided to address proportional reasoning for middle school students. This focus was guided by an advisory panel that included experts from universities, classroom teachers, and five KDE staff.

KET's *GED Connection* series and workplace skills study tools are educating adults in Kentucky and across the country. The series is offered via broadcast and DVD distribution, and Kentucky is the first state to offer *GED Connection* free via Video-On-Demand (VOD) to digital cable subscribers.

Kentucky's high school dropout rate and undereducated adult population has a negative effect on our workforce development and economic development. 25.7% of adults in Kentucky have less than a high school education and our current graduation rate stands at 83.72%.

KET is a national leader in adult education and lifelong learning. Planning is underway for the creation of a new, multimedia, multi-platform system to help adult learners prepare for a new, more-rigorous GED exam in the coming years, and to help lower-level learners develop skills they need before beginning GED-level study. More than 1 million adults worldwide have earned a GED using KET materials; and more than 21,000 of those adults are Kentuckians.

KET is committed to helping individuals that have dropped out of school receive their GED so they can enter the workforce or continue higher levels of education.

KET's "Be Well Kentucky" is aimed at inspiring a culture shift in health attitudes and practices among Kentuckians. Through an array of outreach activities, on-air programs and online media, KET is addressing the state's health problems by spotlighting major health issues and offering practical solutions.

KET's Professional Development initiative was launched 20 years ago to help KDE implement KERA and train teachers. The implementation of Senate Bill 1 will require a massive amount of training and the current reform efforts are once again focusing on educator excellence.

KET has focused on a KDE-identified need: literacy, producing Literacy Strategies In Action, Literacy Without Limits, and Literacy Leadership. KDE provided content expertise and identified classroom excellence. KET produced video resources that demonstrate authentic classroom best practices, as well as lesson plans, discussion guides, and other resources.

KET also partnered with KDE to provide professional development showcasing Kentucky's innovative work with principals as instructional leaders and principal

preparation programs. Project was complemented by the national PBS documentary, *The Principal Story*. KET assembled a task force that included representatives from KDE, the Professional Standards Board, and other agencies to produce a companion program, *Kentucky Principals, Leading By Example*, as well as an online portal where leadership resources can be accessed and used by principal preparation programs. DVDs of the Kentucky programs and resources were provided to all Kentucky public schools.

Continuing Education for Early Childhood Professionals is provided by KET to help Kentucky's licensed, certified, and registered early childhood education professionals earn credit toward state licensing requirements. To earn credits, participants register to view specific programs on-air or on DVD, watch the programs, and complete corresponding coursework and activities. In FY09, KET trained 5,264 licensed and certified childcare providers. The program has seen an average annual growth of 25% in training enrollments due largely to the quality, convenience and flexibility of the training.

KET's Early Childhood Literacy Initiative, through partnerships with Head Start, the Kentucky Department of Education, the Prichard Committee, and Family Resource/Youth Service Centers, extends the educational value of KET's children's series well beyond the TV screen, specifically reaching low-income families to help children ages 2 to 8 learn to read. This ongoing community-based initiative emphasizes the importance of reading aloud to young children to build basic literacy skills. It also trains adults in the responsible use of media to prepare young children to be ready for formal learning by the time they begin their first year of school. In FY09, training and workshops were provided to 5,341 parents and 1,165 childcare professionals.

Family Health Literacy Kits developed by KET and provided to Head Start and Migrant Education Programs across Kentucky, are in more than 500 classrooms to help adults and kids understand the importance of developing healthy dietary and physical habits for life through fun, engaging literacy strategies. These literacy strategies are based on "The Learning Triangle"—a multi-sensory approach to learning utilizing quality media (view), followed by reading to the child from a book on a topic related to the video (read), then finishing with an activity (do) to reinforce the learning.

Early Childhood Creativity projects focus on children's cognitive, emotional, and social development through *Art to Heart*, a nationally-acclaimed educational television series produced by KET. The series explores the important role visual art, music, dance, drama and literature have in the development of infants, toddlers and young children. In 2009, through a grant from the Kentucky Department of Education, KET utilized *Art to Heart* in professional development training for nearly 200 educators and childcare professionals, teaching classroom strategies designed to encourage a child's creativity and imagination, and at the same time, engaging parents in these basic literacy activities.

KET's 2010 Early Childhood Science Initiative, funded in part by Kentucky Power, will provide for a curriculum and workshops for educators in 21 Eastern Kentucky counties to teach science through exploration and discovery to preschoolers. The curriculum will include backyard science (birds, animals, insects, plants, soil); the human body (healthy habits, exercise & movement, muscles, bones, digestive system); water

(buoyancy and displacement), weather (heat, cold, light, sun, moon, stars); colors; life cycles; simple machines (wheels, levers); and mix & watch (chemical reactions).

KET is Kentucky's top provider for high-quality, educational children's media. A carefully-selected schedule of engaging on-air programming for children is designed to boost four key areas of childhood development – *cognitive* (including literacy, science, technology and math), *social*, *emotional*, and *physical* (guiding kids towards healthy living).

To reinforce the educational impact of this children's programming, experienced educational television producers consult children, researchers, parents, educators, daycare providers, and curriculum experts in specific subject-matter throughout the design and production process. Program producers conduct research to determine the best ways to engage and inspire children in active viewing to achieve success in the core curriculum areas that lead the nation's education agenda.

While most commercial networks that air children's programming only meet the three-hour per week requirement set by the Federal Communications Commission (FCC), **KET delivers up to 11 ½ hours of solid educational programming each day.** KET's programs for children and families feature positive character role models that are reflective of its widely-diverse audience.

Kentucky Productions

Producing nearly 1,000 hours of original Kentucky programming each year, KET serves as Kentucky's public square and celebrates Kentucky culture. KET produces more programming about Kentucky (excluding news and sports) than all of Kentucky's commercial broadcasters combined.

KET produces nearly 900 hours of gavel-to-gavel coverage each year of Kentucky legislative sessions and committee meetings, broadcast live on the Kentucky Channel and streamed live at ket.org. KET's *Legislative Update* airs nightly on KET during legislative sessions and features highlights from committee meetings and House and Senate chambers.

KET produces four weekly public affairs programs – *Kentucky Tonight*, *Comment on Kentucky*, *One to One with Bill Goodman*, and *Connections with Renee Shaw*. KET also produces election forums, and the only statewide election night coverage in Kentucky.

KET's most popular Kentucky program is *Kentucky Life*, a weekly magazine program that travels the state to introduce viewers to the Commonwealth's unique people and places.

***Louisville Life* is KET's weekly magazine program for Kentucky's largest city.** KET is examining Louisville's past and revealing a glimpse of its future.

KET's recent long-form productions include an HD journey through the state in *Our Kentucky*, the regional history documentary *Where the River Bends: A History of Northern Kentucky*, and a profile of Kentucky's most famous native son and America's 16th President in *Lincoln: "I, too, am a Kentuckian."*

KET's newest HD documentary premieres in March 2010: *Thoroughbred* is a film about these distinctive horses and the people who breed, sell, race, and love them. Directed by Academy Award-winning filmmaker Paul Wagner, the documentary travels from Central Kentucky to Dubai to capture the beauty of the breed, the thrill of horseracing, the wide array of occupations and activities that make up the horse industry, and the Thoroughbred world's venerated history and tradition.

***Jubilee* is preserving Kentucky's unique cultural heritage**, in an age when regional cultural distinctions are being swallowed up by national pop-culture. The musical performance program is recorded at summer music festivals and features bluegrass, blues and Americana music, and is nationally distributed to over 130 public television stations. KET's arts programs have featured more than 1,000 Kentucky artists and arts groups on-air over the last fifteen years.